	observing over time	identifying and classifying	pattern seeking	research	comparative and fair testing
Year 1	Seasonal changes - Observe weather/seasonal changes **Daily Weather** Plants - How does a daffodil bulb/oak tree/sunflower change over the year/week? **Plants Theme** **Outdoor Provision/outdoor learning**	Plants - Identifying and naming plants and trees **Plants Theme** Animals - Identifying and classifying animals (fish, amphibians, reptiles, birds, animals and carnivores/ herbivores/ omnivores) **Animals Theme** **Around the World Theme** - Identifying human body parts **Ourselves Theme PSHE Me & My Relationships Topic** Everyday materials - Group materials **Materials Theme**	Plants - Do bigger trees lose their leaves first? **Plants Theme** Everyday materials - Is there a pattern in the types of materials that are used to make objects in school? **Materials Theme**	Plants - Common British plants and, where are they? Are there plants that flower in different seasons? **Plants Theme** **Ourselves Theme** Animals - How are the animals in Australia different to the ones we find in Britain? **Around the World Theme Animals Theme** Everyday materials Which materials can be recycled? **Materials Theme**	Everyday materials - What material is the most absorbent? **Materials Theme** - Which materials are the most flexible/absorbent? **Materials Theme** Seasonal changes - In which season does it rain the most? **Daily Weather Around the World Theme**
Working scientifically	Asking questions – How and why do things change? - How and why are things similar/different? Observing closely - suggest how to observe and measure this Record data - make comparisons between living/non-living and record in table/chart Suggest answers - Use scientific language to talk about findings **All science themes**	Identify and classify - Sort into groups Record data - record sorting into tables or sorting circles Suggest answers - talk about their sorting and use findings to sort other things **Plants Theme** **Materials Theme** **Animals Theme**	Asking questions - Why and how are things linked? Observing closely - suggest how to observe and measure this **Daily Weather** **Plants Theme** **Materials Theme** Suggest answers - Talk about their patterns – was it as expected? **Plants Theme** **Materials Theme**	Asking questions - Why are things the way they are? Gather data Using simple books/media to find things out Suggest answers - was the source useful? - What opinions do they have on what they found out? **All science themes**	Perform simple tests Fair testing to find answers Asking questions - Why? How? - notice links between cause and effect - identify simple variables to change and measure Suggest answers - Was the test fair? - Describe causal relationships - Is the relationship as expected? **All science themes** **Toys**
Experiences	Peasholm Park Visit – **Plants Theme** Local visits and walks - **Plants Theme Materials Theme**				

Vocabulary	**Ourselves**: 5 Senses, skeleton, bones, body (all body parts including genitaled) muscles, skin, joint, veins, blood, organs, limb, **Animals**: mammal, reptile, amphibian, fish, bird, insect, herbivore, omnivore, carnivore, vertebrate, in-vertebrates, habitat **Materials**: plastic, wood, glass, metal, fabric, leather, rubber, waterproof, absorbent, transparent, opaque, translucent, recycle, stretchy, bendy, stiff, hard, soft, bumpy, rough, smooth **Plants**: evergreen, deciduous, wildflower, garden flower, tree, root, stem leaf, flower, petal, branch, twig, bark, soil, seed, oxygen **Daily weather**: temperature, weather, rain, sun, snow, sleet, drizzle, mist, fog, wind, thunder, lightning, frost, season, winter, summer, spring, autumn, **Other**: fair test, investigate, predict, measure, record, sort,				
Year 2	<u>Plants</u> - Observe growth of plants over time and how they change **Living Things Theme** <u>Living things</u> - How does a tadpole change over time? **Living Things Theme** <u>Animals</u> - Observe how humans/animals grow **Living Things Theme Missing Explorer Theme PSHE Me and my Relationships**	<u>Living things</u> - Grouping based on their habitats/offspring and living/dead/ never been alive **Living Things Theme Missing Explorer Theme** <u>Everyday materials</u> - Which materials float and sink? -Which materials are waterproof? **Seasides** - Which materials will let electricity go through and which will not?	<u>Living things</u> - What conditions do woodlice prefer to live in? Where do we find the most? **Living Things Theme** <u>Everyday materials</u> Do all metals sink? <u>Plants</u> Do bigger seeds grow into bigger plants? **Weather** Where are the hottest/coldest countries?	<u>Living things</u> - How does a cactus survive in a desert? What happens when sunflowers die? - How does the Arctic compare to the habitat of the rainforest How do animals adapt to their habitat? **Missing Explorer Theme** <u>Animals</u> - What food do you need in a healthy diet and why? **PSHE Healthy Lifestyle Comparing Places Theme (Mexican food) Great Fire of London Theme (bread making)** <u>Everyday materials</u> Which materials are best to make a boat? **The Seaside Theme**	<u>Plants</u> - Do cress seeds grow quicker inside or outside? **Living Things Theme** <u>Everyday materials</u> What is the best material for ___? Which material would be best for the roof of the little pig's house? What conditions do woodlice prefer to live in? **Living Things**

Working scientifically	Asking questions – how and why do things change? - how and why are things similar/different? Observing closely - suggest how to observe and measure this Record data - make comparisons between living/non-living and record in table/chart - sequence changes Suggest answers - Use scientific language to talk about findings Using simple equipment - Use non-standard units and simple equipment to record events/changes All Science themes	Identify and classify - Sort into groups Record data - record sorting into tables or sorting circles Suggest answers - talk about their sorting and use findings to sort other things **Weather** **Living things** **Missing Explorers theme**	Asking questions - why and how are things linked? Observing closely - suggest how to observe and measure this Suggest answers - talk about their patterns – was it as expected? Record data - record in words/pictures or simple prepared formats such as tables/tally charts and maps **Living Things** **Weather**	Asking questions - why are things the way they are? Gather data Using simple books/media to find things out Record data - Record in words and pictures what you found out Suggest answers - was the source useful? - what opinions do they have on what they found out? **All science themes**	Perform simple tests Fair testing to find answers Asking questions - why? How? - notice links between cause and effect - identify simple variables to change and measure Suggest answers - Was the test fair? - Describe causal relationships - Is the relationship as expected? **Living Things x2** **Seaside testing boats**
Experiences	Minibeast hunt Improving the woodland area Pond dipping Growing plants	Being meteorologists Hands on experience with woodlice Food tasting			
Vocabulary	Missing Explorer Theme (Animals, Including Humans) -Adult, offspring, reproduce, young, develop, life cycle, group, sort, classify, reptile, amphibian, bird, mammal, fish, omnivore, carnivore, habitat, adapt, survive, Weather- observe, record, measure, patterns, research, seasons, data, table Living Things- micro-habitat, adapt, conditions, food chain, life cycle, metamorphosis, frogspawn, tadpole, froglet, adult frog, egg, caterpillar/lavae, pupa/cocoon, adult butterfly, insect, arachnid, fair test, Materials- float, sink, waterproof, shape, weight, fair test, wood, plastic, cork, metal, Healthy Eating- five food groups carbohydrates, fruit and veg, dairy, sugar, fat, balanced diet, 5 a day,				

Year 3	Plants Observing movement of water using celery and coloured water **Plants Theme** Rocks - How does tumbling change a rock over time? Can we change the question to - How are rock formed? **Rocks Theme** Light **Light and Dark Theme** *recognise that light from the sun can be dangerous and that there are ways to protect their eyes*	Animals Group animals with and without skeletons **Animals Including Humans Theme** Rocks Classifying different rocks based on properties **Rocks Theme** Light Organise into natural and artificial sources **Light and Dark Theme** Plants Group seeds (does this link to seed dispersal)? **Plants Theme**	Light - what happens to shadows when the light source moves or the distance between the light source and the object changes. **Light and Dark Theme** Forces/magnets - size and shape of magnet affect how strong it is **Forces and Magnets Theme**	Animals Research different food groups and what keep us healthy **Animals Including Humans Theme** Plants - What are all the ways that different seeds disperse? **Plants Theme** Rocks Who was Mary Anning and what did she discover? **Rocks Theme**	Plants Investigate how light/water/ nutrients affect growth? **Plants Theme** Forces/magnets - Which magnet is strongest? - how things move on different surfaces **Forces and Magnets Theme** Light - How does the distance between the shadow puppet and the screen affect the size of the shadow? **Light and Dark Theme**

Working scientifically	Set up simple practical enquiries - Talk about changes, decide what observations to make and what equipment to use. - Use a range of equipment to collect data -Use tables and bar charts Report on findings - Interpret graphs produced by data loggings Draw simple conclusions - Discuss from the changes observed and use scientific language in discussion - suggest improvements to the ways observed **All science themes**	Set up simple practical enquiries - Talk about criteria to sort things and decide when sorting/classifying is the best method **Rocks Theme** - Decide what equipment to use Recording data - Use simple tests to classify including Carroll/ Venn and more complex diagrams and make/ understand simple keys/branching databases **ICT unit -Data and Information- Branching Data Bases. Animals Including Humans Theme** Report on findings - Draw conclusions, discussing similarities/ differences using scientific language **All Science Themes** Suggest improvements - Changes to classification **All Science Themes**	Set up simple practical enquiries - Talk about where patterns are found - Decide on which sets of data to collect and what equipment is needed **All Science Themes** Recording data - Use a range of equipment and make records using tables, bar charts or scatter graphs - Begin to use/interpret data logger information **All Science Themes** Report on findings - Draw conclusions about simple patterns and discuss using scientific language **All Science Themes** Suggest improvements - Improve how to look for patterns	Set up simple practical enquiries - Talk about how things are/way they work - Decide when research by secondary sources is needed **All Science Themes** Gathering data - Use information sources to find things out including data from other pupils **All Science Themes** Record data - Record in their own words and present in different ways **All Science Themes** Report on findings - Draw conclusions and talk using scientific language **All Science Themes** Sugest improvements - Improving research **All Science Themes**	Set up simple practical enquiries - Discuss links between cause and effect and help pose a fair test question - Help to plan a test, decide what data to collect and what equipment to use **All Science Themes** Recording data - Use simple equipment to record data - Record using tables and bar charts - Begin to use/interpret data logging data **All Science Themes** Report on findings - Draw simple conclusions - Talk about/explain causal relationships using scientific language and suggest improvements **All Science Themes**

Year 4	States of matter - Changes when materials are heated and cooled - Observe evaporation/ melting over time Mummification process – using salt to dehydrate fruit –Ancient Egyptian theme Sound - When is our classroom the quietest? **Sound Theme** Electricity - How long does a battery light a torch for? **Electricity Theme**	Living things - Compare and group living things (vertebrate and invertebrate) **Living Things and their habitats** Animals - Compare carnivore and herbivore teeth **Living Things and their habitats** States of matter - Compare and group solids, liquids and gases Add Y4 detail Electricity Electrical and non-electrical appliances **Electricity Theme**	Sound - Patterns between pitch of a sound and features of the object and volume and strength of the vibrations **Sound Theme** Electricity - Observe bulbs get brighter if more cells are added etc. **Electricity Theme** Living things - Are foods that are high in energy always high in sugar? **Living Things and their habitats**	Living things - Research animals - Human impact e.g. deforestation **Living Things and their habitats** Electricity How has electricity changed the way we live? - How does a light bulb work? **Electricity Theme** Animals - How do dentists fix broken teeth? **Living Things and their habitats**	States of matter - Does the surface area of a container affect how long it takes to evaporate? Add Y4 detail Sound Which material is the best for ear muffs? **Sound Theme** Electricity - Which metal is the best conductor of electricity? **Electricity Theme** **Living Things** How does what we drink affect our teeth? Egg in liquid experiment –healthy living(PSHE) / Living things and their habitats

Working scientifically	<u>Set up simple practical enquiries</u> - Talk about changes, decide what observations to make and what equipment to use. - Use a range of equipment to collect data -Use tables and bar charts <u>Report on findings</u> - Interpret graphs produced by data loggings <u>Draw simple conclusions</u> - Discuss from the changes observed and use scientific language in discussion - suggest improvements to the ways observed	<u>Set up simple practical enquiries</u> - Talk about criteria to sort things and decide when sorting/classifying is the best method - Decide what equipment to use <u>Recording data</u> - Use simple tests to classify including Carroll/ Venn and more complex diagrams and make/ understand simple keys/branching databases <u>Report on findings</u> - Draw conclusions, discussing similarities/ differences using scientific language <u>Suggest improvements</u> - Changes to classification	<u>Set up simple practical enquiries</u> - Talk about where patterns are found - Decide on which sets of data to collect and what equipment is needed <u>Recording data</u> - Use a range of equipment and make records using tables, bar charts or scatter graphs - Begin to use/interpret data logger information <u>Report on findings</u> - Draw conclusions about simple patterns and discuss using scientific language <u>Suggest improvements</u> - Improve how to look for patterns	<u>Set up simple practical enquiries</u> - Talk about how things are/way they work - Decide when research by secondary sources is needed <u>Gathering data</u> - Use information sources to find things out including data from other pupils <u>Record data</u> - Record in their own words and present in different ways <u>Report on findings</u> - Draw conclusions and talk using scientific language <u>Suggest improvements</u> - Improving research	<u>Set up simple practical enquiries</u> - Discuss links between cause and effect and help pose a fair test question - Help to plan a test, decide what data to collect and what equipment to use <u>Recording data</u> - Use simple equipment to record data - Record using tables and bar charts - Begin to use/interpret data logging data <u>Report on findings</u> - Draw simple conclusions - Talk about/explain causal relationships using scientific language and suggest improvements

Year 5	Living things Observe life-cycle changes in a variety of living things **Plants and Animals Theme** Animals Changes as humans develop to old age **Plants and Animals Theme** Properties and materials - How does a sugar cube change over time in water? **Materials (mini theme)** Forces - How long does a pendulum swing for before it stops? **Forces (mini theme)**	Properties and materials - compare and group materials based on properties/ magnetism **Materials (mini theme)** Earth and space - Identify phases in the cycle of the moon **Earth and Space Theme** Forces - Label and name all the forces acting upon forces in different situations **Forces (mini theme)** **CAMS (DT mini theme)**	Animals - Relationship between mammal's size and gestation period **Plants and Animals Theme** Earth and space - pattern between size of a planet and it's rotation around the Sun Forces - Look at whether all objects fall through water in the same way **Forces (mini theme)**	Living things - Research work of naturalists and animal behaviourists e.g. David Attenborough **Plants and Animals Theme** Properties and materials - chemists create new materials e.g. Spencer Silver **Materials (mini theme)** Earth and space - Research how solar system ideas developed e.g. Sir Isaac Newton **Earth and Space Theme**	Animals Who grows faster? Boys or girls? **Plants and Animals Theme** **PSHE – My Healthy Relationships** Properties and materials Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains? **Earth and Space Theme (astronaut's nappy)** Forces - explore effects of air resistance (parachutes) **Forces (mini theme)**

Working scientifically	Planning scientific enquiries to answer questions - Recognise when observing over time answers a question, decide on how detailed observations should be and how to make measurements accurate Recording data - Use equipment accurately without support - Record data appropriately in line graphs and interpret changes in data - Recognise effect of changing time/number of observations Report/present findings - Draw valid conclusions, talk about and explain changes and evaluate how well they observed over time.	Planning scientific enquiries to answer questions - Recognise when classification answers a question and decide what equipment/tests/secondary sources of information is needed Recording data - Use a series of tests to sort/classify including secondary sources - Make own keys with 4 or more branches - Use more than one piece of scientific evidence and use equipment accurately Report/present findings - Draw valid conclusions, talk about and explain what they have done and evaluate how well the keys have worked	Planning scientific enquiries to answer questions - Recognise when variables can't be controlled and decide how detailed data needs to be and what equipment to make it accurate Recording data - Record data appropriately/ accurately - Present in scatter graphs/ frequency charts - Recognise patterns in results - Recognise effect of sample size on reliability Report/present findings - Draw valid conclusions, talk about and explain cause and effect patterns and evaluate how well they looked at patterns - Recognise of significance of relationships between sets of data	Planning scientific enquiries to answer questions - Recognise when research using secondary sources is best and decide what sources of information will answer questions Recording data - Use relevant information and data from a range of sources - Recognise how data has been obtained and notice when information is biased/ based on opinion not fact - Present findings in suitable formats Report/present findings - Draw valid conclusions, talk about research and evaluate how well the research answered the question - Recognise not all questions can be answered definitively	Planning scientific enquiries to answer questions - Recognise when variables need to be controlled and plan a fair test selecting suitable variables to measure change, deciding what equipment to use to make it accurate Recording data - Use equipment accurately to collect observations and record data appropriately - Record in line graphs - Identify causal relationships Report/present findings - Recognise significance of results of fair tests - Talk about and explain causal relationships using scientific language - Evaluate effectiveness of fair testing and recognising variables that were difficult to control

Year 6	Animals - How does your heart change over a period of time? - How much exercise do I do in a week? **Keeping Healthy Theme** Electricity - Grouping electrical appliances based on what they do **Electricity Theme** Light - How does my shadow change over the day? **Light Theme**	Living things - Classify animals, plants and micro-organisms using keys **Living Things and Their Habitats** Animals - Which organs make up the circulation system? **Keeping Healthy Theme** Evolution - how animals are adapted - Compare skeletons of apes/humans/Neanderthal **Evolution and Inheritance topic** Electricity - Group appliances **Electricity Theme**	Evolution - pattern between size/shape of bird's beak and food it will eat **Evolution and Inheritance topic** Animals - Is there a pattern between what we eat for breakfast and how fast we can run? **Keeping Healthy Theme** Living things - Do larger flowers have more petals? **Living Things and Their Habitats**	Living things - Work of Carl Linnaeus - Research unfamiliar plants/ animals in habitat **Living Things and Their Habitats** Animals - Research relationship between diet/exercise/drugs **Keeping Healthy Theme** Evolution - research Charles Darwin/Alfred Wallace **Evolution and Inheritance topic** Light - why do some people need glasses? **Light Theme**	Living things - Temperature effect on yeast **Living Things and Their Habitats** Evolution - most common eye colour in class **Evolution and Inheritance topic** Light - relationship between source and shadows **Light Theme** Electricity - how does changing one component affect the circuit? - How does the voltage affect the brightness/ volume of a lamp/buzzer - fruit batteries **Electricity Theme**
Working scientifically	Planning scientific enquiries to answer questions - Recognise when observing over time answers a question, decide on how detailed observations should be and how to make measurements accurate Recording data	Planning scientific enquiries to answer questions - Recognise when classification answers a question and decide what equipment/tests/secondary sources of information is needed Recording data - Use a series of tests to sort/classify including secondary sources - Make own keys with 4 or more branches	Planning scientific enquiries to answer questions - Recognise when variables can't be controlled and decide how detailed data needs to be and what equipment to make it accurate Recording data - Record data appropriately/ accurately - Present in scatter graphs/ frequency charts - Recognise patterns in results - Recognise effect of sample size on reliability Report/present findings	Planning scientific enquiries to answer questions - Recognise when research using secondary sources is best and decide what sources of information will answer questions Recording data - Use relevant information and data from a range of sources - Recognise how data has been obtained and notice when information is biased/ based on opinion not fact - Present findings in suitable formats	Planning scientific enquiries to answer questions - Recognise when variables need to be controlled and plan a fair test selecting suitable variables to measure change, deciding what equipment to use to make it accurate Recording data - Use equipment accurately to collect observations and record data appropriately - Record in line graphs - Identify causal relationships Report/present findings - Recognise significance of results of fair tests

	- Use equipment accurately without support - Record data appropriately in line graphs and interpret changes in data - Recognise effect of changing time/number of observations <u>Report/present findings</u> - Draw valid conclusions, talk about and explain changes and evaluate how well they observed over time.	- Use more than one piece of scientific evidence and use equipment accurately <u>Report/present findings</u> - Draw valid conclusions, talk about and explain what they have done and evaluate how well the keys have worked	- Draw valid conclusions, talk about and explain cause and effect patterns and evaluate how well they looked at patterns - Recognise of significance of relationships between sets of data	<u>Report/present findings</u> - Draw valid conclusions, talk about research and evaluate how well the research answered the question - Recognise not all questions can be answered definitively	- Talk about and explain causal relationships using scientific language - Evaluate effectiveness of fair testing and recognising variables that were difficult to control
Vocabulary	<u>Keeping Healthy theme</u> Circulatory system, digestive, oesophagus, bile, energy, nutrient, gastric acid, enzyme, saliva, excrete, organ, carbohydrate, protein <u>Living things and their habitats</u> Vertebrate, invertebrate, mammal, amphibian, reptile, birds, fish, annelids, molluscs, crustacean, arachnid, insects <u>Electricity</u> Conductor, insulator, electricity, battery, bulb, motor, cell, switch on, switch off, safety, hazard, danger, circuit, series, parallel, components, circuit diagram, control, dim, dimmer, brighter, current, flow, symbol, metal, power source, voltage, rechargeable, mains electric, battery powered, complete circuit <u>Evolution and inheritance</u> Evolution, adaptation, natural selection, inheritance, variation, gene, adaptive traits, inherited traits, characteristics, species, fossils, offspring, mutation <u>Light</u> Light source, concave, convex, straight line, mirror, reflection, shiny, shadow, bounces off, light rays, Sun, prisms, opaque, transparent, translucent, angle, speed of light, retina, lens, iris, cornea, optic nerve, pupil, fair test				
Experiences	<u>Visits/lessons with Scalby school science department</u> Light, evolution and inheritance, electricity				